

### **REMARKS**

Applicant respectfully requests further examination and reconsideration in view of the comments set forth fully below. Claims 1-12 and 15-17 were pending. Within the Office Action, Claims 1-12 and 15-17 have been rejected. Claims 1-12 and 15-17 are now pending.

#### **Rejections Under 35 U.S.C. § 101:**

Within the Office Action, Claim 5 has been rejected under 35 U.S.C. § 101 because the claimed invention is directed to non-statutory subject matter. The Applicants respectfully disagree. The independent Claim 5 is directed to a home location database for maintaining address data identifying a current location of a user equipment. Such a home location database is a physical entity found with a mobile telecommunications network. Within the Office Action it is stated that the home location database is not capable of causing functional change in the computer. As taught within the present specification, the home location database maintains address data identifying a current location of a user equipment. [Present Specification, page 1, lines 27-29] It is further taught within the present specification, that the home location database is operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in the home location database in association with the subscriber identity number. [Present Specification, page 2, lines 3-5] Thus, the home location database, as claimed in Claim 5 is capable of causing functional change in the computer. For at least these reasons, this rejection of Claim 5 under 35 U.S.C. § 101 should be withdrawn.

#### **Rejections Under 35 U.S.C. § 102:**

Within the Office Action, Claims 1-12 and 15-17 have been rejected under 35 U.S.C. § 102(a) as being anticipated by GSM 3GPP TS23.040 (V4.8.0, 06-2003) [hereinafter TS23.040]. The Applicants respectfully disagree. TS23.040 does not disclose the concept of interfacing conventional SMS network components with an IP network, evidenced by the fact that there is no disclosure of “a user equipment using a subscriber number terminating on an Internet Protocol network.” Also, there is no teaching in TS23.040 to show where the authentication server, the internet protocol/SMS gateway and various associated features are disclosed. There is also no teaching in TS23.040 to show where the feature of the flag indicative of whether a UE is currently communicating via the IP network is disclosed.

TS23.040 is a 3GPP technical specification which defines the standard according to which the short message service (SMS) is implemented in conventional 3GPP compliant Public Land Mobile Networks (PLMN), i.e. GSM and UMTS networks. The present invention seeks to improve upon what is disclosed in this standard by providing a system which enables SMS messages to be communicated between a mobile device, and a conventional 3GPP network, via an IP network. The features of the present invention, by virtue of the present claims, are distinguished from TS23.040, by enabling a mobile device attached to an IP network to send and receive SMS messages from a conventional 3GPP PLMN. TS23.040 is referenced on page 13 of the present specification and the limit of what is disclosed therein is effectively summarized in Figure 1 and on page 6, line 3 to page 7, line 9 of the present specification. Given that the present invention is intended to be an improvement on what is disclosed in TS23.040, it is not surprising that some of the functional parts of the present invention are also found in TS23.040. However, there is no disclosure in TS23.040 of any of the features which enable SMS messages to be sent to and from a mobile device attached to an IP network and there is certainly no disclosure of the feature of the authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating and communicate the IP/SMS gateway address to the home location database.

Claims 1, 6 and 10

The independent Claim 1 is directed to a telecommunications system for communicating a Short Message Service (SMS) message to a user equipment using a subscriber identity number terminating on an Internet Protocol network using an Internet Protocol (IP). The system of Claim 1 comprises a short message service centre (SM-SC), a gateway mobile switching centre (GMSC) of an SMS network for communicating SMS messages, an Internet Protocol/SMS (IP/SMS) gateway for communicating between the SMS network and the IP network and a home location database (HLR/HSS) for maintaining address data identifying a current location of a user equipment, the gateway mobile switching centre being operable in response to the SMS message received from the short message service centre to interrogate the home location database for an address to which the SMS message should be sent, the home location database being operable to provide the gateway mobile switching centre with an address of the IP/SMS gateway stored in association with the subscriber identity number, the gateway switching centre being operable to send the SMS message to the IP/SMS gateway, the IP/SMS gateway being operable to retrieve an Internet Protocol address corresponding to the subscriber identity number stored in an IP/SMS

database associated with the IP/SMS gateway, and to communicate the SMS message to the user equipment at the retrieved IP address via the IP network, wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message. Within the Office Action, in order to support the rejection of Claim 1, section 2.1.1, section 3.8 and section 4 of TS23.040 are cited.

Section 4 of TS23.040 describes the basic network structure required to transmit an SMS message within a 3GPP system. It is stated within the Office Action that section 4 discloses a service centre (SC) being connected on “a fixed network outside the GSM network.” This is not relevant to the rejection of the present claims. Section 5 of TS23.040 describes the link between the SC and external networks. Section 5 contains reference only to external PLMNs **not** an external IP network, and certainly not “a user equipment with a subscriber identity number terminating on an IP network,” as required in Claim 1.

It is further asserted within the Office Action that section 3.8 of TS23.040 discloses SMS and email inter-working. However, this section is concerned purely with the format of an inter-working SMS/email, and teaches nothing regarding the actual system required to transmit/receive the email. For example there is no equivalent to the IP/SMS gateway of the present invention.

Beyond these general differences between the scheme disclosed in TS23.040 and the system according to Claim 1 of the present invention, TS23.040 specifically contains no disclosure of the following features of Claim 1:

*wherein the IP network includes an authentication server which is operable to determine the IP/SMS gateway address from the IP network via which the user equipment is communicating, and to communicate the IP/SMS gateway address to the home location database, the IP/SMS gateway address being stored in the home location database in association with the subscriber identity number for retrieval by the gateway mobile switching centre in response to the received SMS message.*

It is contended within the Office Action that these features are disclosed by an 802.11b wireless router with encrypted authentication. The Applicants disagree. A conventional 802.11b wireless router does not send the address of a gateway node (the IP/SMS gateway) to an external database

(the home location register). Therefore, notwithstanding what has been discussed above, the independent Claim 1 is distinguished from the prior art at least by virtue of this feature. The authentication server, in conjunction with the IP/SMS gateway and IP/SMS database, enable an SMS message to be communicated to a UE using conventional SMS network components, when the UE is communicating using an Internet Protocol. None of these features are taught in TS23.040 and TS23.040 provides no motivation to derive them.

The independent Claims 6 and 10 correspond to Claim 1 and include the same limitations discussed above. Therefore, any arguments set above with respect to Claim 1 also apply to the independent Claims 6 and 10.

For at least these reasons, the independent Claims 1, 6 and 10 are allowable over the teachings of TS23.040.

Claims 2-4, 7-9, 11, 12 and 15-17

Claims 2-4 and 15 are all dependent upon the independent Claim 1. Claims 7-9 and 16 are all dependent upon the independent Claim 6. Claims 11, 12 and 17 are all dependent upon the independent Claim 10. As discussed above, the independent Claims 1, 6 and 10 are all allowable over the teachings of TS23.040. Accordingly, Claims 2-4, 7-9, 11, 12 and 15-17 are all also allowable as being dependent upon an allowable base claim.

Claim 5

The independent Claim 5 is directed to a home location database for maintaining address data identifying a current location of a user equipment, the address data providing an address to which an SMS message addressed to the user equipment at a subscriber identity number should be sent. The home location database of Claim 5 is arranged to provide a gateway mobile switching centre with an address of an IP/SMS gateway for communicating the SMS message to the user equipment at the subscriber identity number, when the user equipment is communicating via an Internet Protocol (IP) network using an Internet Protocol, communication being terminated on the IP network, the address of the IP/SMS gateway being provided by an authentication server, which determines the IP/SMS gateway from the IP network via which the user equipment is communicating the home location database being arranged to store for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is

currently communicating via the IP network, and if the flag is set to indicate that the user equipment is currently communicating via the IP network, an address of the IP/SMS gateway to which SMS messages should be sent.

Specifically, it is specified in Claim 5 that

*the home location database being arranged to store for at least the subscriber identity number of the user equipment, a flag indicative of whether the user equipment is currently communicating via the IP network, and if the flag is set to indicate that the user equipment is currently communicating via the IP network, an address of the IP/SMS gateway to which SMS messages should be sent.*

In other words, the home location database of Claim 5 is arranged to store a flag indicative of whether a UE is currently communicating via the IP network, and if the flag is set to indicate that the user equipment is currently communicating via the IP network, an address of the IP/SMS gateway to which SMS messages should be sent. Within the Office Action, in order to support the assertion that these features are anticipated, the sections 3.2.6 and section 2.1.1 of TS23.040 are referenced, respectively.

By citing section 3.2.6 of TS23.040 within the Office Action, it appears that the “Mobile Station Not Reachable Flag” (MNRF) is being equated with the feature of the home location database setting the flag indicative of whether a UE is currently communicating via the IP network. This is clearly wrong. The MNRF indicates whether the UE is available, not what network it is communicating on. Moreover, the fact that the flag indicating that the UE is communicating via the IP address is set, does not mean the UE is unreachable, quite the opposite. Irrespective of the flag set in the home location register, the UE remains available to receive an SMS message. Indeed, this is the whole point of the present invention, i.e., enabling an SMS message to be sent to a UE even if it is communicating via an IP network.

By citing section 3.8.2.3 of TS23.040 within the Office Action, it appears that the “Optional Control Flag” is being equated with the feature of sending an address of the IP/SMS gateway if the flag is set to indicate that the user equipment is currently communicating via the IP network. It is stated within the Office Action that the Optional Control Flag can be used to control email redirection. Even if the disclosure of such a feature was relevant, there is no evidence of this in section 3.8.2.3 of TS23.040. The examples offered in section 3.8.2.3 are invoking a gateway specific function such as adding a pre-stored signature, “chang(ing) the from

address to a pre-stored value”, or adding text to the email. There is no disclosure of redirecting email.

For at least these reasons, the independent Claim 5 is allowable over the teachings of TS23.040.

Applicants respectfully submit that the claims are in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,  
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